

would be allowable if rewritten in independent form. Claim 5 has been rewritten in independent form. Claims 11-20 are objected to but would be allowable if corrected to remove informalities. Applicants present new claims 33-35 for consideration by the Examiner. Applicants believe that no new matter has been introduced in this response.

Claims 5-8 and 11 have been objected to by the Examiner. Applicants have amended claim 11 to clarify the recited claim and respectfully request withdrawal of the rejection. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 5 has been rewritten in independent form. Applicants respectfully request withdrawal of the objection.

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by *Tepman et al.* (U.S. Patent Serial No. 5,730,801). The Examiner asserts that *Tepman et al.* discloses all elements as recited in claim 1. Applicants respectfully respond to this rejection.

Tepman et al. discloses a dual compartment (12, 14) chamber 10, for performing a process, and the dual compartments are selectively communicable and sealable from each other. A pump 32 is fluidly connected to the chamber 10 by an exhaust orifice 22 that is sealable by a slit valve 37. (See, col. 5, line 44, to col. 7, line 42, and Figures 3-5.)

Tepman et al. does not teach, show, or suggest a chamber body having an internal volume defined by first and second substantially cylindrical regions and by side walls extending substantially tangent between the first and second substantially cylindrical regions, a substrate support disposed in the internal volume within the first substantially cylindrical region, and an exhaust system connected to a chamber outlet disposed in fluid communication with the second substantially cylindrical region, as recited in claim 1, and claims dependent thereon. Three embodiments of side walls extending substantially tangent between the first and second substantially cylindrical regions are described on page 12, line 10 to page 13, line 16, of the specification and Figures 6A-C. Applicants respectfully request withdrawal of the rejection.

Claims 9 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over *Tepman et al.* The Examiner asserts that the relative diameters would have been obvious design choice to one of ordinary skill in the art.

Applicants have amended claims 9 and 10 to depend from claim 5, which has been rewritten in independent form, and therefore, believe that the basis for the rejection of claims 9 and 10 has been obviated. Applicants respectfully request withdrawal of the rejection.

Claims 2-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Tepman et al.* in view of *Benjamin et al.* (U.S. Patent No. 5,820,723).

The Examiner asserts that it would have been obvious to provide an inductive-coupling arrangement for the processing region of *Tepman et al.* as taught by *Benjamin et al.* Applicants respectfully respond to this rejection.

Tepman et al. discloses a dual compartment (12, 14) chamber 10, for performing a process, and the dual compartments are selectively communicable and sealable from each other. A pump 32 is fluidly connected to the chamber 10 by an exhaust orifice 22 that is sealable by a slit valve 37. (See, col. 5, line 44, to col. 7, line 42, and Figures 3-5.) *Tepman et al.* further discloses a plasma may be generated by configuring the moveable wall as a cathode with respect to the enclosure formed by the first compartment 12, which is preferably grounded. (See, col. 8, lines 10-58, and Figures 1 and 3-5.)

Benjamin et al. discloses a chamber with a single cylindrical region with a modular mounting arrangement to support a substrate support. The chamber also includes a single vacuum port located in the center portion of an endwall spaced from the substrate support. The chamber also includes a modular liner, a modular power source, and a modular pumping arrangement.

Claim 2 is amended to address matters of form. *Tepman et al.* and *Benjamin et al.*, alone or in combination do not teach, show, or suggest a chamber body having an internal volume defined by first and second substantially cylindrical regions and by side walls extending substantially tangent between the first and second substantially cylindrical regions, a substrate support disposed in the internal volume within the first substantially cylindrical region, an exhaust system connected to a chamber outlet

disposed in fluid communication with the second substantially cylindrical region, a chamber lid mounted on the chamber body, and an electrode disposed on the chamber lid as recited in claim 2, and claims dependent thereon. Applicants respectfully request withdrawal of the rejection.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicants' disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed aspects of the invention. Having addressed all issues set out in the office action, applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) An apparatus for processing a semiconductor substrate, comprising:

a chamber body having an internal volume defined by first and second substantially cylindrical regions and by side walls extending substantially tangent between the first and second substantially cylindrical regions[.];

a substrate support disposed in the internal volume within the first substantially cylindrical region; and

an exhaust system connected to a chamber outlet disposed in fluid communication with the second substantially cylindrical region.

2. (Amended) The apparatus of claim 1, further comprising:

a chamber lid mounted on the chamber body; and

an electrode disposed on the chamber lid.

5. (Amended) [The apparatus of claim 1, further comprising:] An apparatus for processing a semiconductor substrate, comprising:

a chamber body having an internal volume defined by first and second substantially cylindrical regions and by side walls extending between the first and second substantially cylindrical regions,

a substrate support disposed in the internal volume within the first substantially cylindrical region;

an exhaust system connected to a chamber outlet disposed in fluid communication with the second substantially cylindrical region; and

one or more chamber liners defining a substantially cylindrical processing region adjacent the substrate support and an exhaust region adjacent the chamber outlet.

9. (Amended) The apparatus of claim [1] 5, wherein the first substantially cylindrical region has a first diameter at least about 30% larger than a second diameter of the second substantially cylindrical region.

10. (Amended) The apparatus of claim [1] 5, wherein the first substantially cylindrical region has a first diameter at least about 20% larger than a substrate support diameter.

11. (Amended) An apparatus for processing a substrate, comprising:

a chamber body having an internal volume;

one or more liners defining a substantially cylindrical processing region and a substantially cylindrical exhaust region within the internal volume, wherein the substantially cylindrical processing region communicates with the substantially cylindrical exhaust region through one or more openings in the one or more liners;

a substrate support disposed in the substantially cylindrical processing region;
and

an exhaust system in communication with the substantially cylindrical exhaust region through an exhaust port in the process chamber.